

REMARKS

The Applicants request favorable reconsideration of the present application as amended. In the Office Action mailed September 25, 2002, the Examiner rejected claims 1-5, 8, 11, 12, 14, 16-17, 20 and 21 under 35 U.S.C. §102(e) as being anticipated by Kalmanek et al. (U.S. Patent No. 6,324,279). In addition, the Examiner rejected claims 13 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Kalmanek et al., in view of Newton (Newton's Telecom Dictionary, 14th Ed., Telecom Books, New York, 1998). The Applicants request withdrawal of these rejections in view of the foregoing amendments and the following discussion.

The application, as filed, includes twenty two claims, five of which the Examiner indicates would be allowable if rewritten in independent format incorporating all the elements of their respective base claim and any intervening claims. The Applicants thank the Examiner for indicating that claims 6, 7, 9, 10 and 15 would be allowable if they were rewritten.

As filed, claims 1, 12, 14, 16, 17 and 20 were in independent format. The Applicants currently amend formerly independent claims 14 and 17 to now depend from claim 12 and 16, respectively. The Applicants also add new claims 23-43. Of these, claims 25, 36, 38, and 40 are in independent format.

1. Claimed Invention

Each of the independent claims 1, 12, 16, 20, 25, 36, and 40 includes an element directed to storing call state information (e.g., off-hook, dialing, ringing, etc) in a non-customer-premises network element in the path of an H.323 call. As will be discussed below in reference to the rejections under 35 U.S.C. §§ 102(e), 103(a), the cited reference not only does not disclose, but teaches away from the claimed elements directed to storing call state information in a non-customer-premises network element in the path of an H.323 call. Contrary to the claimed

invention, the cited reference (and its priority documents) indicates that such call state information is stored in un-trusted, customer-premises equipment. While the cited reference and the priority documents thereof indicate that some information is maintained in the border routers (i.e., a network element), this information is not call state information as claimed, but rather connection management information, i.e., information used to set-up and tear-down the call (e.g., resource reservation, and/or NAT).

Referring to the claims of the present application, the following list outlines the claim element or elements of independent claims 1, 12, 16, 20, 25, 36, and 40 that are representative of storing call state information in a non-customer-premises network element in the path of an H.323 call.

- Claim 1: “storing on the edge device call state information corresponding to a state of the H.323 call.”
- Claim 12: “a virtual-distributed gatekeeper device comprising ... a memory for holding call state information, the call state information including information about H.323 calls placed by the at least one H.323 device coupled in communication with the virtual-distributed gatekeeper device”
- Claim 16: “an edge device having a first H.323 port and a memory, the memory containing call state information, the call state information including a call state for an H.323 call on the first H.323 port”
- Claim 20: “the edge apparatus comprising means for storing a call state information about the H.323 call”
- Claim 25: “storing on the edge device call state information corresponding to a state of the H.323 call”

- Claim 36: “[a]n edge device comprising ... a memory for holding call state information about the H.323 call”
- Claim 40: “an edge device having a first H.323 port and a memory, the memory storing call state information about an H.323 call originated from an H.323 terminal coupled to the first H.323 port”

All of the claims that depend from independent claims 1, 12, 16, 20, 25, 36, and 40, in turn, necessarily incorporate the elements of the claims from which they depend. Thus, these dependent claims include the element directed to storing call state information in a non-customer-premises network element in the path of an H.323 call.

2. Claim Rejections under 35 U.S.C. § 112

The Examiner rejected claims 17-19 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which the applicant regards as the invention. In particular, the Examiner asserts that the phrase “a significant period of time” in claims 17-19 is vague.

While the Applicants believe that one of ordinary skill in the art would be reasonably apprised one of the meaning of such phrase in view of the prior art and the specification, the Applicants have amended claims 17-19 to remove this element, thereby making the rejections moot. Therefore, the Applicants respectfully submit that claims 17-19 in their amended form satisfy the requirements of 35 U.S.C. §112, second paragraph. The Applicants request that the Examiner withdraw these rejections.

3. **Determining the Earliest Effective Filing Date of a 35 U.S.C. § 102(e) Reference**

The Office Action rejected claims 1-5, 8, 11, 12, 14, 16-17, 20 and 21 under 35 U.S.C. §102(e) as being anticipated U.S. Patent No. 6,324,279 granted to by Kalmanek et al. ("Kalmanek"). The Applicants note the filing date of *Kalmanek* is August 4, 1999, which is after the April 13, 1999 filing date of the present application.

Under present guidelines for 35 U.S.C. §102(e) prior art, the Examiner has to determine the earliest effective U.S. filing date for the material used as the basis of the rejections. See *Examination Guidelines for 35 U.S.C. § 102(e), as amended by the American Inventors Protection Act of 1999, and further amended by the Intellectual Property and High Technology Technical Amendments Act of 2002, and 35 U.S.C. §102(g), at <http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/102eog121102.pdf>.*

In determining the earliest effective filing date of the reference, the Examiner may take into consideration claims to prior U.S. applications under § 119(e). In doing so, however, the Examiner has to determine if those prior applications properly support the subject matter used to make the rejections.

Kalmanek claims priority to two U.S. provisional applications, namely, provisional application serial number 60/095,288 ('288) filed on August 4, 1998 and provisional application serial number 60/104,878 ('878) filed on October 20, 1998. Both of these provisional applications have earlier filing dates than the filing date of the present application. As discussed below, however, the Applicants respectfully submit that these provisional applications do not support the subject matter for making the rejections.

4. **Claim Rejections under 35 U.S.C. § 102(e)**

MPEP § 2131.01 states "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Further, "the identical invention must be shown in as complete detail as is contained in the ... claim." As noted above, each of the claims 1-5, 8, 11, 12, 14, 16-17, 20, and 21 of the present application includes an element directed to storing call state information in a non-customer-premises network element in the path of an H.323 call. The Applicants respectfully submit that neither the '288 nor '878 provisional applications disclose these claimed elements. And thus, the cited *Kalmanek* reference does not disclose the claimed elements either.

The '288 provisional application is a copy of issue 1.0 of AT&T's Distributed Open Signaling Architecture (DOSA) specification and a slide presentation summarizing the DOSA specification. Like the 288 provisional application, the '878 provisional application is a copy of AT&T's Distributed Open Signaling Architecture (DOSA) specification. This second DOSA specification, however, is a later version or "Issue 2.0." The Applicants invite the Examiner to review the '288 and '878 provisional applications. To that end, the Applicants enclosed with this Office Action response an Information Disclosure Statement including the '288 and '878 provisional applications.

A. **The '288 Application Lacks Subject Matter for Making the Rejections**

According to the '288 provisional application "DOSA involves a number of components that work together to provide telephone service over a packet network." See *'288 provisional application* at page 11, para. 4. In the DOSA architecture,

"conventional telephones interface to a device known as a *Broadband Telephony Interface* (BTI) that acts as a gateway between the telephone line and the packet network. ... [T]he BTI is an intelligent end-point that is capable of detecting

changes in state of the telephone line, collecting dialed digits, and participating in the implementation of telephone features. *Id.* (emphasis added).

“Intelligence at the end-terminals that reside in a customer’s premises implies that these cannot be trusted entities. ... The less state that has to be maintained in the network, the better.” *Id.* at page 15, para. 4-5.

Moreover, according to the ‘288 provisional application,

“[DOSA] use[s] the intelligence in the end-terminals to maintain the necessary information that is needed for calls that are currently in progress with them, rather than requiring network servers to keep this information. Interactions with network servers are entirely stateless: Translation functions, or processing of signaling messages are done by looking up *static* information in databases. The servers in the network (gatekeeper) do not retain any per-call state.” *Id.* at page 15, para. 5 (emphasis added).

“it is [DOSA’s] goal to develop an architecture that does not require gatekeepers to maintain the state of individual calls. ... Some information, such as the “gates” associated with policy, resource reservation state, and Network Address Translation (NAT) table entries, must be maintained in the border routers in the network for each connection. However, DOSA is designed such that there is no other state information for stable calls needs to be stored anywhere except the endpoints. For example, no piece of network equipment knows whether a phone is off-hook and dialing, or whether the phone is ringing, or disconnected but not yet hung up. Such state information is only kept at the BTI.” *Id.* at page 17, para. 3 (emphasis added).

While the above quote indicates that some information is maintained in the border routers, this is not call state information (e.g., off-hook, dialing, ringing, etc) as claimed, but rather connection management information, i.e., information used to set-up and tear-down the call (e.g., resource reservation, and/or NAT). *Compare the specification of the present application*, at page 4, lines 16-19 with *the 288 provisional application*, at page 17, para. 3.

B. The '878 Application Lacks Subject Matter for Making the Rejections

Like the '288 provisional application, the '878 provisional application states "DOSA does not require high-availability network servers that maintain the state of each individual call. See the '878 provisional application, at page 11, para. 3. And while, the '878 provisional application further states "[DOSA] follow[s] the Internet principle of 'fate-sharing,' maintaining state only in the edge routers and end-points that are directly involved in a particular call," and that "[s]ome information, such as the "gates" associated with policy, resource reservation state, Network Address Translation (NAT) table entries, and "connection flow state" for billing events must be generated in the edge routers in the network for each connection," it further states "[h]owever, DOSA is designed such that there is no other state information for stable calls stored anywhere except the endpoints." *Id.* at page 11, para. 3 and at page 16, para. 1. Reiterating the disclosure of the '288 provisional application, the '878 provisional application states "no piece of network equipment knows whether a phone is off-hook and dialing, or whether the phone is ringing, or disconnected but not yet hung up. Such state information is *only* kept at the BTI." *Id.* at page 16, para. 1 (emphasis added).

The '878 provisional application goes on to state "[i]n this way, the procedure to set up a new call is a simple transaction with the Gate Controller, which does the authentication and authorization, passes the permission to make a connection to the edge router, and then "forgets" everything about that call." And "it places the function of managing the state of a call where it belongs — at the BTI." *Id.* at page 16, para. 1.

In light of the foregoing, the Applicants respectfully submit the claimed invention is not disclosed in the cited art, and thus request the Examiner to pass originally filed claims 1-22 to issue. As noted above, claims 23-37 and 40-43 also contain an element directed to "storing call

state information in a non-customer-premises network element in the path of an H.323 call,” the Applicants also request the Examiner to pass these claims to issue.

5. Claim Rejections under 35 U.S.C. § 103(a)

As noted above, the Examiner rejected claims 13 and 22 under 35 U.S.C. § 103(a) as being unpatentable over *Kalmanek*, in view of *Newton* (Newton's Telecom Dictionary, 14th Ed., Telecom Books, New York, 1998).

A. The Proposed Combination Does Not Teach All the Elements

According to M.P.E.P. § 2143, in order to establish the required *prima facie* case of obviousness of a claimed invention by applying a combination of references, the proposed combination must teach or suggest all of the elements of the claimed invention.

The Applicants submit that neither the '288 nor the '878 provisional applications disclose the claimed elements directed to storing call state information in a non-customer-premises network element in the path of an H.323 call. And thus, the cited *Kalmanek* reference the not only does not disclose the claimed elements. The arguments from section 3, under the heading *Claim Rejections under 35 U.S.C. § 102(e)* are incorporated herein by reference.

In addition to *Kalmanek*, the Examiner asserts that *Newton* teaches (i) a proxy server may provide address translation that can be used to allocate a few IP addresses to many users, and (2) a proxy server may provide extra security by replacing calls to insecure systems' subroutines. The Applicants submit that absent from this teaching is some reference to “storing call state information in a non-customer-premises network element in the path of an H.323 call.”

Given that (1) the base reference (i.e., *Kalmanek* and the provisional applications thereof) does not contain the combination of claimed elements, and (2) the cited section in the *Newton*

reference likewise fails to disclose such subject matter, the Applicants submit that these references either alone or combined, fail to disclose or suggest, the combination of claimed elements.

B. A Reference Must Expressly or Impliedly Suggest the Claimed Invention

Under 35 U.S.C. § 103, to support the conclusion that the claimed invention is directed to obvious subject matter, a reference must expressly or impliedly suggest the claimed invention. The Applicants submit that the combination of *Kalmanek* (i.e., *Kalmanek* and the provisional applications thereof) and *Newton* not only fails to disclose “storing call state information in a non-customer-premises network element in the path of an H.323 call,” but also teaches away from the claimed elements directed to this subject matter.

The arguments from section 3, under the heading *Claim Rejections under 35 U.S.C. § 102(e)* are incorporated herein by reference. As noted in the above-quoted sections, the ‘288 and the ‘878 provisional applications explicitly state “[t]he less state that has to be maintained in the network, the better” and “no piece of network equipment knows whether a phone is off-hook and dialing, or whether the phone is ringing, or disconnected but not yet hung up[; ... s]uch state information is only kept at the BTI.” See the ‘288 provisional application at page 15, para. 4 to page 17, para. 3; and the ‘878 provisional application, at page 16, para. 1.

In support of teaching away, the Applicants point to the ‘288 and ‘878 provisional applications, which state:

“[h]aving the state of each individual call maintained in network servers, while achievable, does not scale cost effectively. The less state that has to be maintained in the network, the better. We use the intelligence in the end-terminals to maintain the necessary information that is needed for calls that are currently in progress with them, rather than requiring network servers to keep this information. ... The servers in the network (gatekeeper) do not retain any per-call

state. This enables us to recover from failures of individual servers in the network by moving to another without impacting ANY of the calls currently in progress in any way.” See the ‘288 provisional application, at page 15, para. 5 and the ‘878 provisional application, at page 15, para. 2 to page 16, para. 1.

“[T]he procedure to set up a new call is a simple transaction with the Gate Controller, which does the authentication and authorization, passes the permission to make a connection to the edge router, and then “forgets” everything about that call. There are two major advantages to this design: First the reliability of the service does not depend on the reliability of an individual Gate Controller throughout the length of the call, and secondly, it removes many complex synchronization problems where two (or more) entities need to have simultaneously accurate information. Since the interactions with the Gate Controllers are simple stateless transactions, there is no necessity for consecutive calls to be processed by the same Gate Controller. Gate Controller crashes affect only the calls currently in transition, and not stable conversations. Further, it is likely that most calls in transient states can be recovered and successfully established through a backup or spare Gate Controller. We believe this design principle will enable us to operate in large scale, cost-effectively. Furthermore, it places the function of managing the state of a call where it belongs — at the BTI. An existing call would therefore be impacted only by the BTI failing to perform its function, which would be the case anyway even if it didn’t maintain state. See the ‘878 provisional application, at page 16, para. 1.

In view of the foregoing, the Applicants submit that claims 13 and 22, both of which ultimately depend from independent claims 12 and 20, are individually allowable as well.

6. New Claims

The Applicants request examination of newly added claims 23-43. Support for the new claims may be found throughout the specification and drawings as filed in this application. In particular, reference may be made to page 4, line 8 through page 20, line 7 and the Figures references therein. No new matter has been added. As noted above, claims 25, 36, 38, and 40 are in independent format, and of these, independent claims 25, 36, and 40 include an element directed to storing call state information in a non-customer-premises network element in the path of an H.323 call. Favorable consideration of all the new claims is requested.

7. **Conclusion**

As set forth above, each of the claims provides a substantial distinction over the cited art. In addition, the claimed combination of elements directed to storing call state information in a non-customer-premises network element in the path of an H.323 call provides a number of advantages.

For example, having the network element in the path of the H.323 call store the call state information reduces or eliminates the need, expense, hassle and management of encryption algorithms (and their related infrastructure) for maintaining call-state information as is needed when using a customer premises device that has the potential of being compromised and not trusted. Because the network element storing the call-state information is in the path of the call and is generally under the control of one or more service providers, when one of the network elements in the path of the H.323 call fails, the call will terminate, leaving the call-state information under the control of the service provider. This reduces or eliminates (at least as a primary source of the information) elaborate encryption schemes for retrieving call state information stored in end terminals. As apparent to those skilled in the art, other advantages and features of the claimed combination exist as well.

In view of the foregoing remarks, the Applicants submit that the pending claims are in good and proper form for allowance, and the Applicants respectfully request the Examiner to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would otherwise expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at 312-913-3304.

Date: February 24, 2003

Respectfully submitted,

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